

Remarks

Claims 1-6, 9-13, 16-23 and 26-35 are currently pending in the Application.

Telephone conference

Applicant thanks the Examiner for the many courtesies extended during the telephone conference held with undersigned, Attorney Alex Krayner, on February 21, 2008.

Allowable Claims

Applicant acknowledges with gratitude the Examiner's indication of allowability as to Claims 1-5, 18, 21-22, 28-30, 32 and 35.

35 U.S.C. §102(e) Rejection

Claims 6, 9, 16-17, 19-20, 23, 26-27, 31 and 34 stand rejected under 35 U.S.C. §102(e) as being anticipated by Watson (U.S. Patent No. 6,980,353). Applicant respectfully disagrees. Applicant submits that the Examiner has not shown that Watson teaches each and every element as set forth in the rejected claims. In particular:

Claim 6

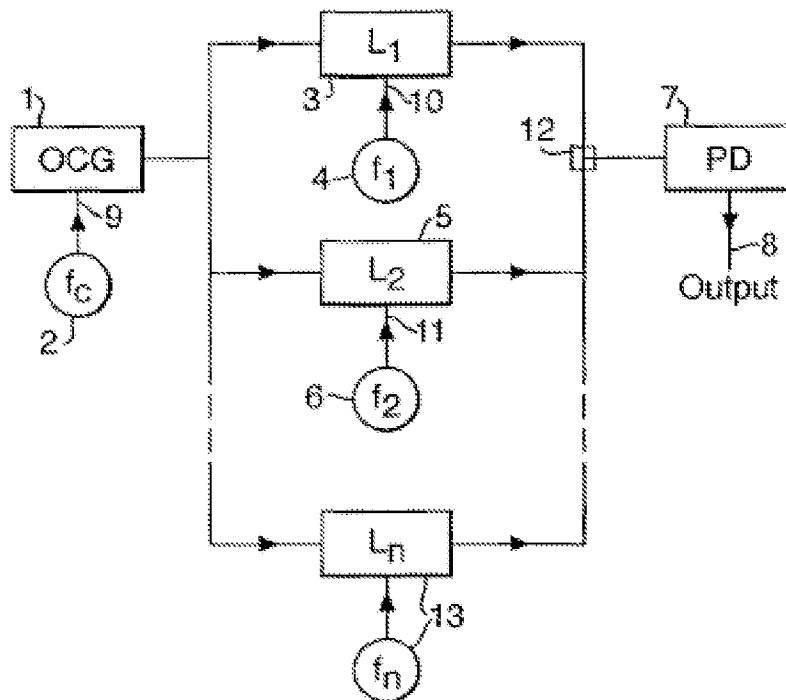
A. Applicant submits that the Examiner has not shown that Watson discloses, suggests or teaches, *inter alia*, the following features recited by Claim 6 of the present application:

“an optical comb generator for generating a comb of discrete optical tones
... a **data source** providing data for modulating the light generated by a
majority but less than all of the lasers in the array of lasers in each
segment” (emphasis added)

Referring to Watson's Figure 1 reproduced below, the Examiner asserts that “an optical comb generator” as recited in Claim 6 is disclosed by Watson's optical comb generator “1” (p. 2, section 2 of the Official Action). The Examiner further asserts that “a data source” as recited in Claim 6 is disclosed by Watson's RF frequency reference “2” (p. 2, last two lines of the Office Action). Applicant respectfully traverses the Examiner's

assertion.

Fig. 1.



According to Watson, RF frequency reference “2” provides signal f_c to the optical comb generator 1. Contrary to Watson, Claim 6 specifically recites that “a data source” provides “data for modulating the light generated by a majority but less than all of the lasers in the array of lasers,” not for an optical comb generator. Because Watson’s RF frequency reference “2” does not provide signal f_c to lasers in the array of lasers, Watson does not teach, disclose or suggest “a **data source** providing data for modulating the light generated by a majority but less than all of the lasers in the array of lasers” (emphasis added) as recited in Claim 6. Hence, Claim 6 is patentable over Watson and should be allowed by the Examiner.

If the Examiner does not agree, the Examiner is requested to comply with 37 C.F.R. §1.104(c)(2) by designating “as nearly as practicable” where Watson discloses “a **data source** providing data for modulating the light generated by a majority but less than all of

the lasers in the array of lasers” (emphasis added) as recited in Claim 6. Otherwise, the Examiner is requested to withdraw his rejection.

B. Applicant submits that the Examiner has not shown that Watson discloses, suggests or teaches, *inter alia*, the following features recited by Claim 6 of the present application:

“a frequency shifter for frequency shifting at least one laser in the array of lasers in each segment” (emphasis added)

Referring to Watson’s Figure 1 reproduced above, the Examiner asserts that “a frequency shifter” as recited in Claim 6 is disclosed by Watson’s frequency selection and translation devices “3, 5” (p. 3, l. 1 of the Official Action). The Examiner further asserts that “the array of lasers” as recited in Claim 6 is disclosed in Watson’s c. 2, l. 58 to c. 3, l. 26 (p. 2, section 2 of the Office Action). Applicant respectfully traverses the Examiner’s assertion.

Referring to Watson’s Figure 1 above, the outputs of the frequency selection and translation devices “3, 5” are connected to what the Examiner alleges to be a multiplexer “12” (p. 3, l. 6 of the Office Action). Although Watson does not specifically identify the functionality of the device “12,” even if device “12” is a multiplexer as alleged by the Examiner, how are the frequency selection and translation devices “3, 5” supposedly frequency shift at least one laser when outputs of the frequency selection and translation devices “3, 5” are connected to an alleged multiplexer “12,” not an at least one laser?

Applicant submits that the Examiner failed to comply with 37 C.F.R. §1.104(c)(2) by not designating “as nearly as practicable” how Watson’s frequency selection and translation devices “3, 5” supposedly frequency shift at least one laser when outputs of the frequency selection and translation devices “3, 5” are connected to an alleged multiplexer “12.” Applicant respectfully requests that the Examiner “designate as nearly as practicable” how Watson’s frequency selection and translation devices “3, 5” are able to frequency shift at least one laser when the outputs of the frequency selection and translation devices “3, 5” do not appear to be connected to any lasers. Otherwise the Examiner should withdraw the rejection.

C. Applicant submits that the Examiner has not shown that Watson discloses, suggests or teaches, *inter alia*, the following features recited by Claim 6 of the present application:

“multiplexers for combining outputs of the modulated lasers and the frequency-shifted unmodulated reference signal and the comb of discrete optical tones onto at least two optical paths” (emphasis added)

Referring to Watson’s Figure 1 reproduced above, the Examiner asserts that “multiplexers” as recited in Claim 6 are disclosed by Watson’s device “12” (p. 3, l. 6 of the Official Action). Applicant respectfully traverses the Examiner’s assertion.

As stated above, Watson does not explain the functionality of the device “12.” Why does the Examiner believe that the device “12” is a multiplexer? The Examiner appears to rely on facts within his personal knowledge. Applicant respectfully requests, under 37 C.F.R. § 1.104(d)(2), that the Examiner provide an Affidavit supporting the Examiner’s assertions that Watson’s device “12” is a multiplexer. If the Examiner is relying on a prior art reference Applicant respectfully request that the Examiner cite the reference. Otherwise, Applicant respectfully requests that the assertion be withdrawn.

Even if, for example purposes only, the Examiner’s allegation that device “12” is a multiplexer is considered, how is the device “12” supposed to combine “outputs of the modulated lasers and the frequency-shifted unmodulated reference signal and the comb of discrete optical tones onto at least two optical paths” as recited in Claim 6 when device “12’s” only inputs are from frequency selection and translation devices “3, 5,” not modulated lasers?

The Examiner is requested to comply with 37 C.F.R. §1.104(c)(2) by designating “as nearly as practicable” where Watson’s discloses “modulated lasers” as recited in Claim 6 whose outputs are combined by Watson’s device “12.” Otherwise, the Examiner is requested to withdraw the rejection.

D. Applicant submits that the Examiner has not shown that Watson discloses, suggests or teaches, *inter alia*, the following features recited by Claim 6 of the present application:

“multiplexers for combining outputs ... onto at least **two optical paths**”
(emphasis added)

Referring to Watson’s Figure 1 reproduced above, the Examiner asserts that “multiplexers” as recited in Claim 6 are disclosed by Watson’s device “12” (p. 3, l. 6 of the Official Action). Applicant respectfully traverses the Examiner’s assertion.

According to Watson’s Figure 1 above, Watson’s device “12” device only has one output. Where does Watson disclose “at least two optical paths” as recited in Claim 6? The Examiner is requested to comply with 37 C.F.R. §1.104(c)(2) by designating “as nearly as practicable” where Watson’s discloses device “12” “combining outputs ... onto at least **two optical paths**” (emphasis added) as recited in Claim 6. Otherwise, the Examiner is requested to withdraw the rejection.

Claims 9 and 31

Claims 9 and 31, at least based on their dependency on Claim 6, are also patentable over Watson.

Claim 16

Applicant submits that, at least for the reasons stated above for Claim 6, Watson does not teach, disclose or suggest “**modulating ... according to the source data** to produce a comb of modulated optical tones” (emphasis added), “**frequency shifting** at least one optical tone in the optical comb by a frequency less than Δf to produce a frequency shifted unmodulated optical reference tone” (emphasis added) and “**multiplexing** the optical comb, the frequency shifted unmodulated optical reference tone and the comb of modulated tones **onto at least one optical path**” (emphasis added) as recited in Claim 16. Hence, Claim 16 is patentable over Watson and should be allowed by the Examiner.

Claims 17 and 19-20

Claims 17 and 19-20, at least based on their dependency on Claim 16, are also patentable over Watson.

Claim 23

Applicant disclose or suggest “**data source** providing data for modulating the light generated by at least a majority but less than all of the lasers in the array of lasers in each segment” (emphasis added) and “a **frequency shifter** for frequency shifting at least one laser in the array of lasers in each segment” (emphasis added) as recited in Claim 23. Hence, Claim 23 is patentable over Watson and should be allowed by the Examiner.

Claims 26-27 and 34

Claims 26-27 and 34, at least based on their dependency on Claim 23, are also patentable over Watson.

35 U.S.C. §103(a) rejection

Claims 11-13 and 33 stand rejected under 35 U.S.C. §103(a) as being obvious in view of Heflinger (U.S. Patent No. 6,545,785) and further in view of Drentea (U.S. Patent No. 7,139,545).

Applicant submits that the Examiner has not established a prima facie case of obviousness for the claims rejected under 35 U.S.C. §103(a) because the Examiner has failed to show that the cited references teach each and every element as claimed in the present application.

Claim 11

Applicant submits that the Examiner has not shown that Heflinger and Drentea disclose, suggest or teach, *inter alia*, the following features recited by Claim 1 of the present application:

“at least **two demultiplexers** for demultiplexing signals on at least **two**

optical paths” (emphasis added)

Although the Examiner concedes that Heflinger and Drentea do not disclose multiple receiver segments and multiplexers/demultiplexers, the Examiner alleges that it would have been obvious to implement multiple receiver segments 8 disclosed by Heflinger and the Examiner alleges that it is well known in the art and obvious to include some form of multiplexing/demultiplexing to condense the communication signals (p. 5, ll. 8-17 of the Office Action). Applicant respectfully traverses the Examiner’s assertion that it would have been obvious for one skilled in the art to include “two demultiplexers” as recited in Claim 11 in the device disclosed by Heflinger.

Accordng to Heflinger’s Figure 1, reproduced below, the receiver 8 requires **three** inputs, 24, 30 and 54, to work. Heflinger specifically teaches that a signal entering photodetector 60 is a combination of signal 30 and a portion of signal 24 (c. 5, ll. 21-28 of Heflinger). Heflinger also specifically teaches that a signal entering photodetector 75 is a combination of signal 54 and a remaining portion of signal 24 (c. 6, ll. 15-21 of Heflinger).

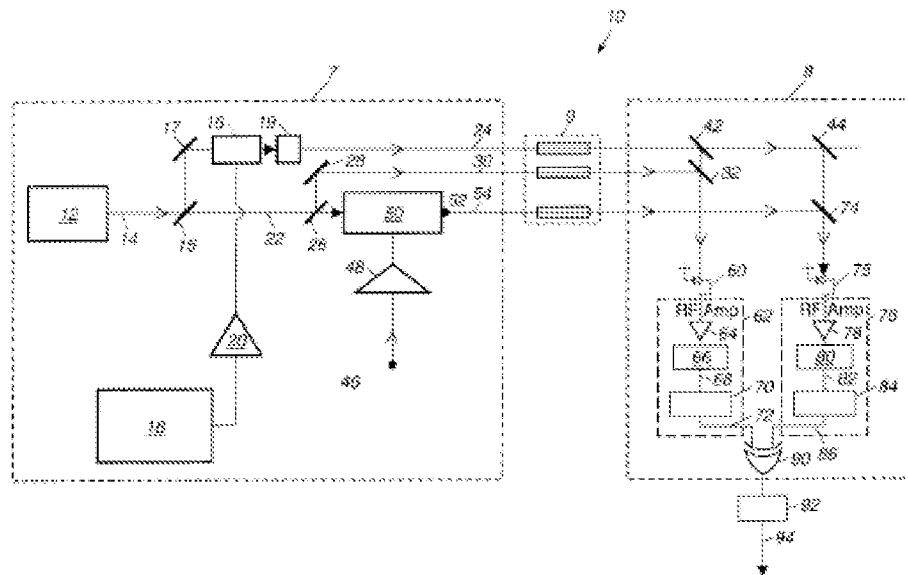


Figure 1

If one skilled in the art was to use multiple receivers 8 as alleged by the Examiner, it would mean that each of the three inputs, 24, 30 and 54, would have to be demultiplexed by a separate demultiplexer. This would require three demultiplexers, not “two demultiplexers” as recited in Claim 11.

During a telephone conference with the undersigned on February 21, 2008, the Examiner indicated that Heflinger’s receiver may actually have only one input wherein the signals 24, 30 and 54 are of different wavelength. Even if that is the case, Applicant respectfully submits that one skilled in the art would only require a single demultiplexer to demultiplex the three signals 24, 30 and 54 that are of different wavelength, not “two demultiplexers” as recited in Claim 11. Where is motivation or suggestion to add “two demultiplexers” to Heflinger’s receiver 8? Applicant submits that there is not motivation or suggestion to add “two demultiplexers” to Heflinger’s receiver 8 because the three signals 24, 30 and 54 that are of different wavelength may be demultiplexed with a single demultiplexer.

Further during the telephone conference with the undersigned on February 21, 2008, the Examiner indicated that Heflinger’s devices 42 and 74 may recite the “two demultiplexers” as recited in Claim 11. Applicant respectfully notes that device 74 is actually a combiner that combines signals 24 and 54 (c. 6, ll. 18-19 of Heflinger). Because combiner 74 combines signals 24 and 54, combiner 74 cannot be a demultiplexer as alleged by the Examiner.

In view of the above, Applicant submits that Claim 11 is patentable over the cited art and should be allowed by the Examiner. If the Examiner does not agree, the Examiner is requested to comply with 37 C.F.R. §1.104(c)(2) by designating “as nearly as practicable” where cited references discloses “at least two demultiplexers” as recited in Claim 11.

Claims 12-13 and 33

Claims 12-13 and 33, at least based on their dependency on Claim 11, are also patentable

over the cited art.

* * *

Conclusion

In view of the above, reconsideration and allowance of all the claims are respectfully solicited.

The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, then the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136 (a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

I hereby certify that this document is being transmitted to the Patent and Trademark Office via electronic filing.

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